DOCUMENT RESUME

ED 112 233 CE 005 258

AUTHOR Koeninger, Jimmy G.
TITLE Human Relations Games. Book One.
INSTITUTION Ohio State Univ., Columbus. Ohio Distributive Education Materials Lab.
REPORT NO VT-102-034
NOTE 57p.; For related document, see CE 005 257
AVAILABLE FROM Distributive Education Materials Laboratory, Ohio State University, 1885 Neil Avenue, 115 Townshend Hall, Columbus, Ohio 43210 (No price given)

EDRS PRICE MF-$0.76 HC-$3.32 Plus Postage
DESCRIPTORS Communication Skills; Decision Making Skills; Group Activities; Group Dynamics; *Human Relations; *Instructional Materials; *Leaders Guides; Management Education; *Management Games; Post Secondary Education; Problem Solving; Secondary Education

ABSTRACT

The need for classroom materials which encourage total student involvement served as the basis for the manual. Four games related to the development of human relations skills are presented. In the first game, participants compete as members of a team in performing a task under three types of communication situations: (1) one-way communication, (2) two-way communication, and (3) two-way communication plus visual aids. The second game emphasizes skills in goal-setting both for individuals and groups. The third gaming activity demonstrates the need for cooperation among members of a group to accomplish a group task. The fourth game provides the participants with an opportunity to identify the principles of group consensus making. Performance objectives, required materials, and procedures for conducting the activity are specified in detail for each game. (VA)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED112233

HUMAN RELATIONS GAMES

BOOK ONE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Prepared by

Jimmy G. Koeninger, Ph.D.
Teacher Educator
Distributive Education
Department of Business Administration
ANGELO STATE UNIVERSITY
San Angelo, Texas 76901

CE 005 258

Produced and Distributed by

DISTRIBUTIVE EDUCATION MATERIALS LABORATORY
THE OHIO STATE UNIVERSITY
1885 Neil Avenue, 115 Townshend Hall
Columbus, Ohio 43210

(VT 102 034)
2/3

Table of Contents

	Page
Introduction	i
Human Relations Game One:	
"THE COMMUNICATION GAME"	I-1
Human Relations Game Two:	
"THE CUBE STACKING GAME"	II-1
Human Relations Game Three:	
"THE FIVE-SQUARE GAME"	III-1
Human Relations Game Four:	
"THE MOON SURVIVAL GAME"	IV-1

INTRODUCTION

Teachers have indicated a need for classroom materials which encourage total student involvement and have motivational features. It is believed that the instructional activities presented will motivate students to become involved in the learning experiences. Although the instructional strategy is "gaming", the teacher should not view the experiences as being without educational importance. Gaming techniques have been considered by some non-users as being frivolous; however, once the teacher uses the gaming approach, he will discover the motivational feature of this instructional strategy. The user should be careful not to use the games as "time-killers" or the students may not receive the full effect of the learning experience. The most important part of the gaming experience is the post-game discussion. Several post-game discussions have been provided for each game to recall unconscious learning which occurred, reinforce obvious learning, identify methods for improving performance, and conduct a self-evaluation.

The four games presented focus upon human relations skills and attitudes. An overview of the games is presented below:

Human Relations Game One: "THE COMMUNICATION GAME"

In this game, participants compete as members of a team in performing a task---building a structure using Tinker Toys---in the least amount of time and with the greatest accuracy. Participants will experience three types of communication situations: (1) one-way communication; (2) two-way communication; and (3) two-way communication plus visual aids.

Human Relations Game Two: "THE CUBE STACKING GAME"

Participants are directed to estimate the number of cubes they can stack in a single vertical column. The participants establish their

goal and receive profit points for their efforts.

Human Relations Game Three: "THE FIVE-SQUARE GAME"

This gaming activity demonstrates the need for cooperation among members of a group to accomplish a task. Participants are given puzzle parts and told that the group's task is completed when each group member has a square in front of him. The rules enhance the spirit of the needs of others.

Human Relations Game Four: "THE MOON SURVIVAL GAME"

In this game, participants are called upon to rank items as individuals, then as a group, employing group consensus principles in their decision-making activities.

Human Relations Game One

THE COMMUNICATION GAME[1]

Game Overview

In this game, participants compete as members of a team in performing a task. The participants are called upon to perform a task---building a structure using Tinker Toys---in the least amount of time with the greatest accuracy. Participants will experience three types of communication situations:

1. One-way communication.
2. Two-way communication.
3. Two-way communication plus visual aids.

Performance Objectives

After participating in the gaming activity and post-game discussion, the participant will be able to:

1. Organize and transmit a message in such a manner that the message will accomplish what it is intended to do in the least amount of time with the greatest accuracy.
2. Identify causes of communication breakdowns.
3. Identify the advantages and disadvantages of one-way and two-way communication systems.
4. Understand that "feedback" is a continuous process involving both the sender and receiver.
5. Understand that meaningful feedback is obtained only when question methods

---

[1]Developed by Dr. Jimmy G. Koeninger, Angelo State University, San Angelo, Texas.

are used (e.g., oral questioning) that tests comprehension, and by acquiring restatement.

Equipment, Materials, and Supplies

If the user has a group of twenty-four (24) participants, the following will be needed:

1. Four (4) tables with six (6) chairs at each table.
2. Six (6) cardboard shields. Suggested dimensions: 36" (width) X 24" (height). The shields will be placed in the center of the table to separate the sender and receiver. Legs are needed to hold the shield in a vertical position.
3. Six (6) patterns of a structure which can be made of Tinker Toys.
4. Six (6) packages (or boxes) of Tinker Toys. You can purchase a large box of Tinker Toys and divide the contents into six portions. Be certain that each package contains enough parts to accomplish the task.
5. A timing device, such as a stopwatch.

If Tinker Toys are not available, other materials can be used, i.e., sticks, blocks, paper symbols, string, etc.

Procedure

The following procedure is recommended until the instructor gains confidence and experience in using the game.

PRE-GAME PREPARATION.

1. Reproduce the "Team Performance Chart" (Appendix I-A) on the blackboard or make a transparency for the overhead projector.
2. Review the patterns (Appendix I-B) and select one for use in the game. The

pattern selected should be reproduced for each team.

3. Arrange for tables and chairs. One table and six (6) chairs are needed for each team. Each team consists of six (6) members.
4. Locate a room where participants can be sent until it is their time to perform their task.

GAMING ACTIVITY.

5. Divide the participants into teams. A team consists of six (6) members. Assign the teams to a table.
6. Distribute the following gaming materials to each team:

   1 - Cardboard shield

   1 - Package of Tinker Toys

7. Announce: "In this game, you will compete with other teams by building a structure with Tinker Toys. Three tasks are required, each demanding different guidelines. Each team should identify two team members to perform Task A, two members to perform Task B, and two to perform Task C. The winning team will be the one who completes the three tasks (A, B, and C) in the least amount of time with the greatest accuracy."
8. Announce: "The team members who will be performing Tasks B and C should leave the room until requested to return."
9. Announce: "In Task A, one person will describe how to build a structure made with Tinker Toys. The other person will construct a structure with the Tinker Toys. In a few minutes, a pattern will be distributed to the person (the sender) who will describe how to build the structure. Will the two team members locate yourselves across the table from each other with the cardboard shield between you."
10. Distribute pattern to the sender.

11. Announce: "The sender will describe the structure to the builder (the receiver). The sender may not ask the receiver if he understands the directions. The receiver may not say anything or gesture to the sender. The sender cannot see the structure being built from his directions (the message). The only communication will be the sender's message. The sender may not show the pattern to the receiver."
12. Announce: "A five-minute maximum time limit is in effect. Your team will have five minutes to complete their task. As soon as the sender has communicated his directions and the receiver completed his task, bring the structure to me. Your time will be recorded and the accuracy of the structure evaluated and recorded. If you have not completed your task, you will be assigned 5 minutes and a partial percentage for accuracy."
13. Announce: "Do you have any questions? If not, you may begin."
14. Observe the teams' approaches to performing their task. You may want to use a video-tape recorder. The tapes and observations could be used in the post-game discussion.
15. As teams complete their task, record "minutes" and "accuracy". Your accuracy evaluation is based upon the pattern and is totally subjective. You may want to have selected participants to perform the accuracy evaluations.
16. At the end of the 5-minute time limit, call time and record team efforts on the Team Performance Chart (Appendix I-A). Request the patterns be returned to you and the structure taken apart.
17. Request the team members responsible for Task B to return to the gaming room. The team members who performed Task A may remain and watch Task B.
18. Announce: "In Task B, one person will describe how to build a structure made with Tinker Toys. The other person will construct a structure with the Tinker Toys. In a few minutes, a pattern will be distributed to the

person (the sender) who will describe how to build the structure. Will the two team members locate yourselves across the table from each other with the cardboard shield between you."

19. Distribute pattern to the sender.
20. Announce: "The sender will describe the structure to the builder (the receiver). The receiver may ask questions, seek clarification of directions, ask for additional directions, or anything else which would be helpful in building the structure. The sender may not see the structure being built nor may the sender show the pattern to the receiver."
21. Announce: "A five-minute maximum time limit is in effect. Your team will have five minutes to complete their task. As soon as the sender has communicated his directions and the receiver completed his task, bring the structure to me. Your time will be recorded and the accuracy of the structure evaluated and recorded. If you have not completed your task, you will be assigned five minutes and a partial percentage for accuracy."
22. Announce: "Do you have any questions? If not, you may begin."
23. Observe the teams' approaches to performing their task. You may want to use a video-tape recorder. The tapes and observations could be used in the post-game discussion.
24. As teams complete their task, record "minutes" and "accuracy". Your accuracy evaluation is based upon the pattern and is totally subjective. You may want to have selected participants to perform the accuracy evaluations.
25. At the end of the 5-minute time limit, call time and record team efforts on the Team Performance Chart (Appendix I-A). Request the patterns be returned to you and the structure taken apart.
26. Request the team members responsible for Task C to return to the gaming room. The team members who performed Tasks A and B may remain and watch

Task C.

27. Announce: "In Task C, one person will describe how to build a structure made with Tinker Toys. The other person will construct a structure with the Tinker Toys. In a few minutes, a pattern will be distributed to the person (the sender) who will describe how to build the structure. Will the two team members locate yourselves across the table from each other with the cardboard shield between you."
28. Distribute a pattern, a pad, and a pencil to the senders.
29. Announce: "The sender will describe the structure to the builder (the receiver). The receiver may ask questions, seek clarification of directions, ask for additional directions, or anything else which would be helpful in building the structure. The sender may not see the structure being built nor may the sender show the pattern to the receiver. The sender may, however, use paper and pencil to communicate any directions or may draw a graphic description of the structure. The pattern may not be shown to the receiver."
30. Announce: "A five-minute maximum time limit is in effect. Your team will have five minutes to complete their task. As soon as the sender has communicated his directions and the receiver completed his task, bring the structure to me. Your time will be recorded and the accuracy of the structure evaluated and recorded. If you have not completed your task, you will be assigned 5 minutes and a partial percentage for accuracy."
31. Announce: "Do you have any questions? If not, you may begin."
32. Observe the teams' approaches to performing their task. You may want to use a video-tape recorder. The tapes and observations could be used in the post-game discussion.
33. As teams complete their task, record "minutes" and "accuracy". Your

accuracy evaluation is based upon the pattern and is totally subjective. You may want to have selected participants to perform the accuracy evaluations.

34. At the end of the 5-minute time limit, call time and record team efforts on the Team Performance Chart (Appendix I-A). Request the patterns be returned to you and the structure taken apart.

35. Before conducting the post-game discussion, compute the "Team Total" column. Add the number of minutes taken for each team to perform Tasks A, B, and C and place the total in the appropriate column ("Total of Minutes"). The "accuracy rating average" is computed by adding the accuracy percentages for Tasks A, B, and C and dividing by three (3). You should also average all the vertical columns. A sample "Team Performance Chart" has been computed and presented in Appendix I-C. Post the completed Team Performance Chart to allow all the participants to review the chart and make their own observations.

36. If the gaming activity has been "normal" the following observations should be made:

    a. In comparing Tasks A, B, and C, Task C may or may not be accomplished in less minutes but should produce the greatest accuracy rating.

    b. In comparing Tasks A and B, Task B may or may not be accomplished in less minutes but should produce the greater accuracy rating.

    c. Task A may or may not be accomplished in the most minutes but should produce the lowest accuracy rating.

37. If the accuracy ratings are not "normal", you will want to relate to your observations to determine the reason(s) for the deviations from past gaming experiences.

38. Conduct the post-game discussion using the questions provided and the content passouts (Appendix I-0).
39. Consider playing the game again to allow the participants the opportunity to:
    a. Improve their ability to organize and transmit a message which will allow completion of the tasks in the least amount of time with the greatest accuracy possible.
    b. Ask questions (seek feedback) that test comprehension by requiring restatement.
    c. Compete against other teams.

Post-Game Discussion Questions

The following questions should help in stimulating discussion and reinforcing the principles which were experienced in the gaming activity. Every attempt should be made to relate the principles to on-the-job experiences of the participants.

TASK A: ONE-WAY COMMUNICATION

1. How did the receivers and senders feel in the one-way communication situation? Did you become frustrated in your role as sender? Why? As receiver? Why?
2. Having seen the pattern, did you as the receiver feel the sender's message was organized and accurate? What suggestions would you provide to improve the message?
3. As a sender, do you feel your receiver performed according to the message you transmitted? If not, what do you believe was the problem? How would you overcome the problem(s)?
4. Did the lack of "feedback" affect either senders or receivers?

5. Have you experienced one-way communication before? On your job? Were you frustrated? Did you perform your duties as directed?
6. What is absent in one-way communication that would improve the sender's message and the receiver's accuracy in interpreting the message and transforming the message into action (building the structure)? (Answer: feedback).

TASK B: TWO-WAY COMMUNICATION.

7. How did the senders and receivers feel in the two-way communication situation? Did you become frustrated in your role as sender? Why? As receiver? Why?
8. Having seen the pattern, did you as the receiver feel the sender's message was organized and accurate? Did you become frustrated with the message? Did you express this frustration to the sender in your feedback? Senders, were you aware of the receiver's frustration? Do you feel the frustration was justified? What did you do to reduce the frustration?
9. As a sender, do you feel your receiver performed according to the message you transmitted? If not, what do you believe was the problem? How would you overcome the problem(s)?
10. Did the "feedback" aid the efforts of the sender? Of the receiver? Is it possible that feedback is a continuous process involving both sender and receiver? Did the senders attempt to determine the degree of comprehension of the receiver? Did senders question the receiver and request a stated interpretation by the receiver? Would feedback be more meaningful if oral communication was used and restatement requested?
11. If feedback was used, why were problems still present in the two-way communication process? How could these problems be corrected? How can

senders of a message be assured that it is received correctly?

TASK C: TWO-WAY COMMUNICATION PLUS VISUAL AIDS

(You can use all of the questions for two-way communication in discussing Task C.)

12. Were the visual aids helpful in performing Task C? Were the time performances by the teams slowed with visual aids? If so, were the visuals effective? Do they aid in message accuracy? Can we observe this in your team's performance?
13. Using the visuals, did you as senders find the receiver being more dependent upon the visual than on the sender? If so, did you feel unneeded? Do the visuals communicate more quickly the message? Are visuals always superior to oral communication? If not, when would visuals be preferred? Are visuals as superior when attitudes are being transmitted? Can we say that visuals are preferred in some situations?

GENERAL QUESTIONS

14. How can we organize and transmit a message which can be transmitted in the least amount of time with the greatest accuracy?
15. What causes communication breakdowns?
16. What are the advantages of one-way communication? Disadvantages?
17. What are the advantages of two-way communication? Disadvantages?
18. Is feedback important to the sender? To the receiver?
19. What methods can be used in producing meaningful feedback?

Appendix I-A

TEAM PERFORMANCE CHART

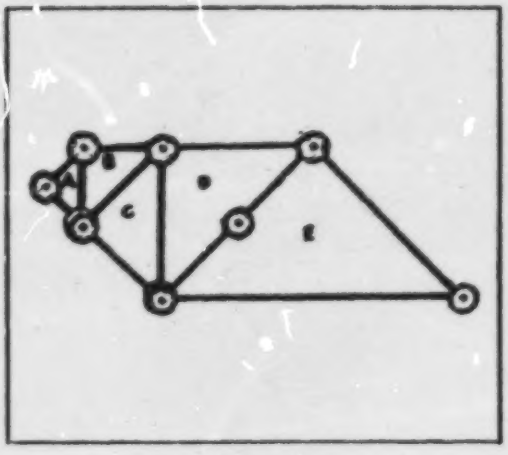
TEAMS	TASKS						TEAM TOTAL	
	A One-Way		B Two-Way		C Two-Way Plus Visuals			
	Minutes	Accuracy Rating	Minutes	Accuracy Rating	Minutes	Accuracy Rating	Total Of Minutes	Accuracy Rating Average
#1								
#2								
#3								
#4								
Average								

Appendix I-B

PATTERNS

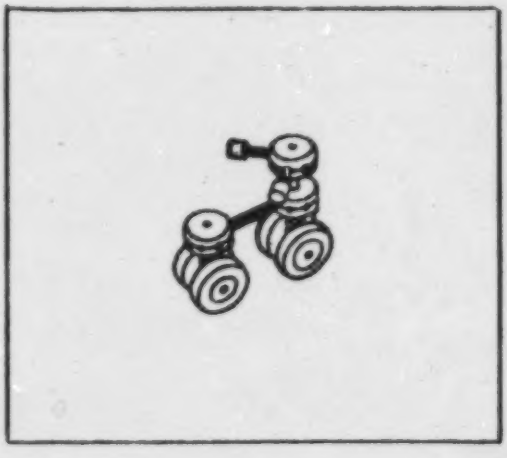
Pattern A

Pattern B



Pattern C

Pattern D



NOTE: Select <u>one</u> pattern to be used for Tasks A, B, and C; otherwise, comparison of communication techniques would be impossible due to the varying difficulty levels of the individual patterns.

Appendix I-C

SAMPLE TEAM PERFORMANCE CHART

TEAMS	TASKS						TEAM TOTAL	
	A One-Way		B Two-Way		C Two-Way Plus Visuals			
	Minutes	Accuracy Rating	Minutes	Accuracy Rating	Minutes	Accuracy Rating	Total Of Minutes	Accuracy Rating Average
#1	3 min. 0 sec.		4 min. 50 sec.		3 min. 0 sec.		10 min. 50 sec.	
#2	3 min. 15 sec.		5 min. 0 sec.		5 min. 0 sec.		13 min. 15 sec.	
#3	4 min. 0 sec.		3 min. 0 sec.		4 min. 50 sec.		11 min. 50 sec.	
#4	5 min. 0 sec.		4 min. 25 sec.		3 min. 45 sec.		13 min. 10 sec.	
Average	3 min. 49 sec.		4 min. 19 sec.		3 min. 59 sec.		12 min. 06 sec.	

Observations:

(a) Team #1 would be declared the winner---least total time (10 min., 50 sec.) and the greatest percentages (80%).

(b) Two-way communication (Task B) produced a greater accuracy rating (83%) than one-way communication (Task A---55%)

(c) Two-way communication plus visuals (Task C) produced the greatest average accuracy rating (95%).

Appendix I-D

COMMUNICATION THEORY[2]

Laboratory Studies of Communication Nets

In one experiment an initial situation was established where "A" talked to "B" without reply. Two-way communication was set up in the same way, only this time there was conversation; that is, communication from "A" to "B" back to "A". Later the same format was followed involving more people. Several practical findings emerged from these studies. One-way communication was much faster, and the sender felt that he was getting his message across. The two-way system, however, was found to be more accurate. The receivers felt more sure of themselves as to what they were receiving. The sender found himself more vulnerable in the give-and-take situation because the receivers picked up his mistakes and oversights and told him about them.

One might conclude that if speed alone is of primary importance, or if simple information is to be transmitted, then one-way communication has the edge in efficiency. In a two-way system, the sender may feel inadequate at times, or criticized, but he knows what has happened. Communication is really what the listener interprets. There are those who hear only what they want to hear. And, no doubt, at times all of us prefer less efficient communication, in which we avoid the psychological risks that may be involved. The morale of each of us in any given communication setting, particularly a work setting, may well depend on the structure of who talks to whom and through what channels.

---

[2]Extracted from Psychology by B. Von Haller Gilmer (New York: Harper and Row, Publishers).

Some Generalizations About Communication

Communication means more than just pushing people around or setting them passively in front of the television screen. It involves changing behavior, and in a sense is related to all education and all daily living. Here are some findings which have been put together from a vast literature of studies:

1. People are selective in what they see and hear. They tend to favor communications which are congenial or satisfying more than neutral or hostile ones.
2. People are more likely to talk with like-minded people than with those who are disinterested or are opposed to their views.
3. We seek out communication situations which tend to boost our own ego.
4. After making a questionable decision, we tend to interact with someone who will reinforce the wisdom of our decision.
5. If an audience is large enough it is virtually impossible to get everybody in it to agree.
6. The higher the education of people, the greater the reliance on printed media. The lower the education level, the more people depend on the spoken word and picture media.
7. The more ego-involved we become with a subject, the more we wish to share it with other people.
8. We tend to perceive persuasive communication in accordance with our own thinking.
9. The more status the communicator has, the more influence he exerts.
10. People tend over a period of time to forget the source of information but to remember the content.
11. "Majority opinion" is more effective in changing attitudes than "expert opinion".

12. The more attached people are to a group, and the more active they are within it, the greater their response to communications.
13. Communications are more likely to reinforce existing positions than to change them.
14. Communication has more effect on changing minor issues than on major issues.
15. When opinions are influenced by communications, they tend to regress to a pre-existing position unless reinforced from time to time.
16. The higher the intelligence of the individual, the more likely he is to acquire information from communication.
17. People are limited in the amount of information they can absorb in any given period of time.

Human Relations Game Two

THE CUBE STACKING GAME[1]

Game Overview

In this game, participants are placed around tables on which several cubes have been placed. Participants are told to estimate the number of cubes they can stack in a single vertical column within a specified period of time. The participants establish their goal, stack the cubes, and compare their actual cube stacking performance with their goal. Participants also have the opportunity to establish goals and compete with other participants for "profit points". A third goal setting activity involves team participation.

Participants are provided the opportunity to:

1. Compare their goal setting behavior with their actual performance.
2. Observe the effect the achievement motive has upon their goal setting behavior.
3. Appreciate the difficulty of establishing goals for which no past experience has been provided.
4. Experience group goal-setting behavior.

Performance Objectives

After participating in this gaming activity and the post-game discussion, the participant will be able to:

1. Approach goal-setting activities with a more realistic attitude.

---

[1]Prepared by Dr. Jimmy G. Koeninger, Angelo State University, San Angelo, Texas.

2. Understand the problems of establishing goals---as individuals or in a team situation.
3. Understand the influence of the achievement motive in himself and other participants.
4. Understand the influence of the group upon goal-setting.
5. Understand the difficulty in motivating workers.

Equipment, Materials, and Supplies

1. An adequate number of tables on which the cubes will be stacked. No more than four participants should be placed around a table.
2. Approximately 350 cubes are needed to accommodate 16-20 participants. The cubes which this writer has used were wooden and 1-1/2 inches square. NOTE: Ask your industrial arts teacher to cut these cubes for you. Or substitute some other stackable item such as pennies, sugar cubes, erasers, etc.
3. Goal setting record sheets are needed for the participants.
4. A one-minute timer is also needed.

Procedure

The following procedure is recommended until the instructor has gained confidence and experience in using this game.

1. Distribute the cubes evenly among all tables. If the cubes are distributed unequally to the participants, their goal setting behavior may be affected. Cubes should be spread evenly on each table so that all participants can reach them easily.
2. Announce: "On each table you will find a number of cubes. Your task will be to see how many cubes you can stack in a single vertical column in one

minute. (You should demonstrate how this is to be accomplished.) You can only use one hand to stack your column."

3. Distribute the Record Sheet (Appendix II-A).
4. Announce: "Let's look at the Record Sheet. For time period one, I want you to estimate (establish your goal) how many cubes you can stack in a single vertical column in one minute. Has everyone established their goals? Any questions?"
5. Announce: "You will receive profit points based upon the number of cubes you stack in relationship to the goal you established. If you do not attain your goal, you will receive five (5) profit points for each cube stacked. For example, if your goal was twelve (12) and you only stacked nine (9) cubes you would receive 45 profit points. However, if you attain your goal, you receive ten (10) profit points for each cube you stacked up to your goal and five (5) profit points for each cube you stacked beyond your goal. For example, if your goal was twelve (12) and you stacked fifteen (15) cubes, you receive ten (10) profit points for each cube you stacked up to your goal (12 cubes X 10 points = 120 profit points) plus five (5) profit points for each cube you stacked in excess of your goal (3 excess cubes X 5 points = 15 profit points). Thus, you will receive 135 profit points for stacking fifteen (15) cubes with a goal of twelve (12) cubes."
6. Announce: "If everyone is ready, Go!"
7. Allow one minute for the cube stacking activity. You should observe the participants and take notes of unique approaches. Some participants will proceed quite slowly and deliberately while others will work more rapidly. Announce to participants to be careful so they do not knock over another participant's column of cubes.

8. Announce at the conclusion of the one-minute work period: "Stop. Count the number of cubes you stacked, record your 'actual performance' on the Record Sheet, and compute the number of 'profit points' you received for your effort."
9. You may find it helpful to stimulate post-game discussion if you post goals and actual performances on the blackboard. Notice those participants who established their goal much lower than their actual performance and those who established their goals much higher than their actual performance.
10. Announce: "Let's try it a second time. You know how many cubes you stacked in the first time period, how many cubes do you feel you can stack in this second time period? Place your goal on the Record Sheet.
11. Announce: "If everyone is ready, Go'"
12. Allow one minute for the cube stacking activity. Walk around the room and record what you observe.
13. Announce at the conclusion of the one-minute work period: "Stop. Count the number of cubes you stacked, record your 'actual performance' on the Record Sheet, and compute the number of 'profit points' you received for your effort."
14. You may want to conduct a brief discussion at this time, but save a major review for the post-game discussion. Again, you may want to record goals and actual performances on the blackboard.
15. Announce: "This time, each table (four persons at each table) will compete as a team. Each team should select one team member as the supervisor. The supervisor is responsible for establishing the team's goal; however, the supervisor can, if he wishes, seek assistance from his three workers." (Provide the teams ample time to select a supervisor.)

16. Announce: "Will the team supervisors come forward and I will give you the directions for this third time period."
17. Announce to the supervisors: "You are the team's supervisor and are responsible for establishing a team goal. When you return to your team, you will have five minutes to establish your team's goal. The team's goal is based upon the total number of cubes all the team members can stack in four vertical columns. For example, if each team member can stack 15 cubes, the team's goal could be established at 60. However, the final decision for the team goal is your responsibility as supervisor. Return to your group, determine your goal, and write your team goal on the Record Sheet.
18. Announce: "If the teams are ready, Go!"
19. Allow one minute for the cube stacking activity. Walk around the room and record what you observe.
20. Announce at the conclusion of the one-minute work period: "Stop. Count the number of cubes your team stacked, record the team's 'actual performance' on the Record Sheet, and compute the number of 'profit points' your team received for your effort."
21. You may want to identify the teams' goals and actual performances and recognize the team who received the most profit points.
22. Conduct the post-game discussion.

Post-Game Discussion Questions

The post-game discussion questions should prove helpful in recalling the participant's behavior for reinforcing what was learned in the gaming experience. Every attempt should be made to relate the participants' gaming experiences to their on-the-job activities.

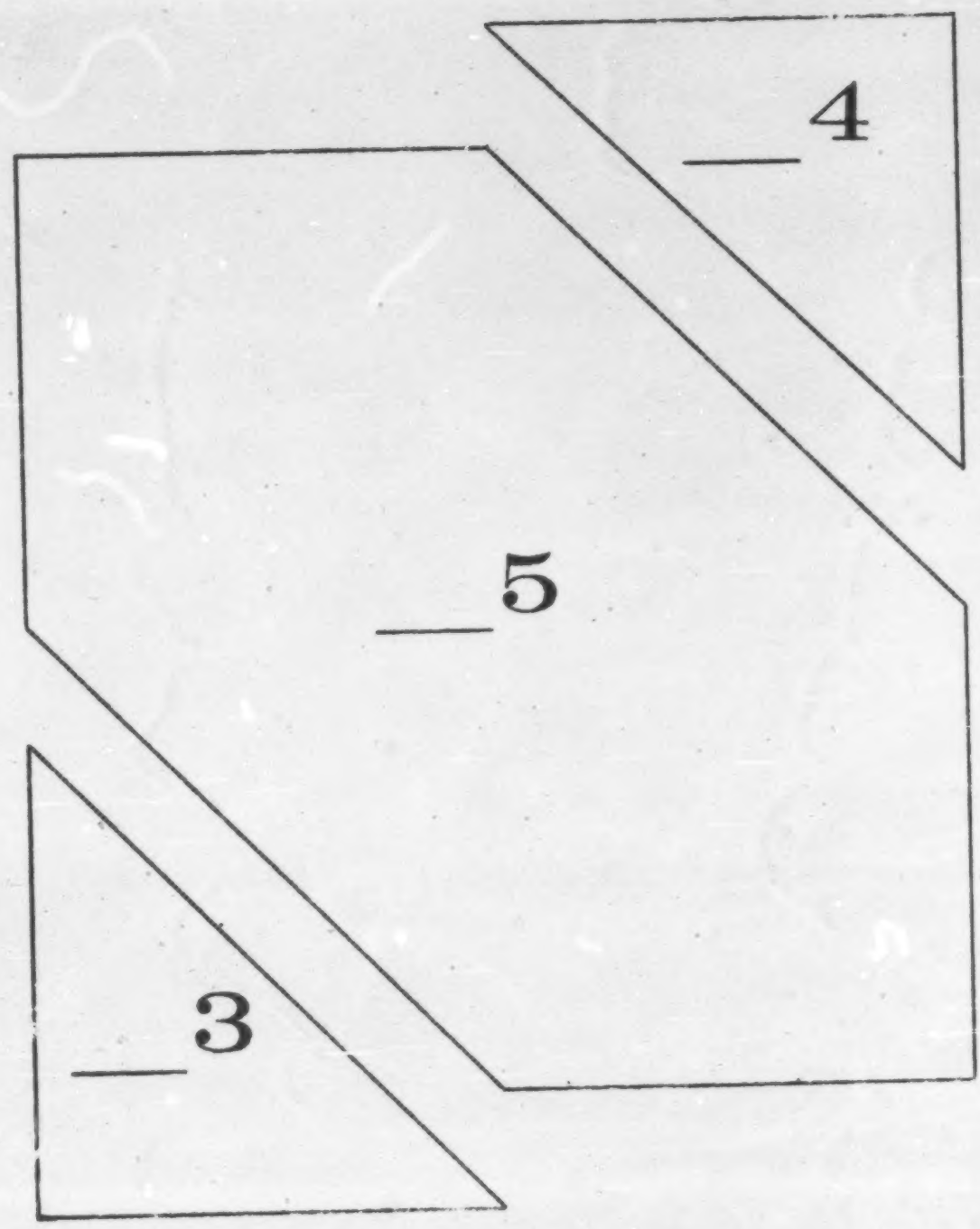
The following questions relate to "Time Period One"---the first goal-setting

effort:

1. How realistic were your goals? How many of you established goals which were exactly what your actual performance was? How many established goals which were too high? How many established goals much lower than your actual performance?
2. Did you have difficulty in establishing your goal in the first time period? Why was it so difficult to estimate the number of cubes you could stack?
3. Did anyone set your goal low, achieve your goal, and stop stacking? Why? (Isn't this similar to many persons in the labor force who do what they're told to do and then quit?) Is this a good approach? Why not? Do you think this person will be promoted?
4. Did anyone establish a goal and find out that you could not attain your goal because of environmental influences---i.e., the cubes were not square thus limiting the height, another participant's cubes fell and knocked over your column, the table was jarred, etc. (Isn't this true on the job? We establish goals but are constrained because we lack customers, the right merchandise isn't available, etc.)

The following questions relate to "Time Period Two"---the second individual goal-setting effort:

5. What influenced your goal for the second time period? How much did your actual performance in the first time period affect your goal in this time period? Were you affected by the goals and performances of the other participants? Which had the strongest influence?
6. Why do persons establish a goal that is easily reached rather than attempting to set a goal which will receive maximum points?
7. Did anyone appreciably increase their goals after the first time period? Why?



8. Were any of you motivated to set a goal that would give you maximum points and thus declare you the winner?

The following questions relate to "Time Period Three"---the team competition:

9. How did your team establish the team goal? Did the supervisor arbitrarily establish the goal or did workers contribute their ideas? (Compare the different approaches to goal setting and review the teams' successes. You may be able to illustrate which method is better, which hopefully will be when all members are participating.)
10. How did your team accomplish your goal? Some teams will work as individuals; other teams will assign responsibilities, i.e., stackers, suppliers, and supervisor; and other teams will stack their four vertical columns together to achieve a more stable stack and a greater height.) Which method was most successful?
11. As a supervisor, how did you motivate your workers?

Appendix II-A

RECORD SHEET

Time Period One

1. Goal . . . . . _____ cubes
2. Actual performance . . . . . _____ cubes
3. Profit points received
   (a) If you did not attain your goal, you receive 5 points for each cube stacked. . . . . _____ points
   (b) If you did attain your goal, you receive 10 points for each cube you stacked up to your goal and 5 points for each cube you stacked beyond your goal. [For example, if your goal was 12 and you stacked 15 cubes, you receive 10 points for each cube you stacked up to your goal (12 cubes X 10 points = 120 points) plus 5 points for each cube you stacked in excess of your goal (3 excess cubes X 5 points = 15 points). Therefore, you receive 135 points for stacking 15 cubes with a goal of 12 cubes.] . . . . . _____ points

Time Period Two

1. Goal . . . . . _____ cubes
2. Actual performance . . . . . _____ cubes
3. Profit points received . . . . . _____ points

Time Period Three

1. Goal . . . . . _____ cubes
2. Actual performance . . . . . _____ cubes
3. Profit points received . . . . . _____ points

Human Relations Game Three

THE FIVE-SQUARE GAME[1]

Game Overview

This gaming activity will demonstrate the need for cooperation among members of a group (team) to accomplish a group task. Participants are assigned to teams consisting of five members. Each team member receives a number of puzzle parts. The participants are told that there are exactly enough puzzle parts among the five members on a team to make five squares. The team's task is completed when a square appears in front of each team member. The game however does not allow any form of communication---verbal or nonverbal. Teams can only complete their task if they are aware of the needs of other members of the team. The team who completes the task in the shortest period of time is declared the winner.

The effectiveness of this gaming activity can be demonstrated by observing the participants' behavior in future group efforts.

Performance Objectives

After participating in the gaming activity, the participant will be able to:

1. Understand the importance of cooperation among members of a group who are attempting to perform a group task.
2. Demonstrate the importance of the awareness of the needs of others in a group-oriented activity.

---

[1] Prepared by Dr. Jimmy G. Koeninger, Angelo State University, San Angelo, Texas. The original designer is unknown.

Equipment, Materials, and Supplies

1. One table for every five persons. If you have 25 participants, you need five tables.
2. One Team Packet for each team (which consists of five members). Construction of the team packets is described in the "procedures" section.

Procedure

The following procedure is recommended until the instructor has gained confidence and experience in using the game in the classroom.

1. Assign participants to teams consisting of five members. For example, if there are twenty-three (23) participants, you will have four (4) teams and three extra participants. The three extra persons should be assigned as observers to record team behavior.
2. Each team should be located around a table so that all members of the team can exchange puzzle parts with ease.
3. Distribute team packets (use a large 9" X 12" envelope) to each team. In each team packet, five smaller envelopes are found, one envelope for each team member. The following directions should be helpful in preparing packets for your teams.
    a. You should prepare several team packets at one time so that you will always have an adequate supply for future use. You might consider making five team packets. Five team packets will accommodate twenty-five participants.
    b. There should be five (5) squares (Appendix III-A) in each team packet. Each square is composed of three (3) puzzle parts; therefore, each team packet will include fifteen (15) puzzle parts.
    c. Code the parts of each square according to the illustration in

Appendix III-A.

d. Secure five (5) envelopes for member packets and code each envelope according to the illustration in Appendix III-A.

e. Parts which are coded A2 should be placed in member packet A2 as illustrated in Appendix A, A3 parts in packet A3, and so forth.

f. The five (5) packets (A1, A2, A3, A4, and A5) are placed in a Team Packet "A" as illustrated in Appendix III-A.

g. Since you will be preparing five (5) team packets, you will want to code all Team Packets differently in case the parts would be mistakenly combined. Each Team Packet should be coded with a different alphabet letter---i.e., "B", "C", "D", and "E". Puzzle parts should be coded the same as for Team Packet A (as illustrated in Appendix III-A) except the prefix "B" would be used---e.g., "B1", "B2", "B3", "B4", and "B5".

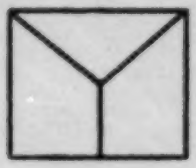
h. Patterns for the five (5) squares are provided in Appendix III-B. A number of materials could be used to make the squares. The more durable the material, the longer the squares will last since they will be handled a great deal in a gaming activity. Cardstock can be used and acquired economically. An easy way to differentiate sets of squares per team would be to secure different colored material for each team. If available, plexi-glass would be an excellent material to use. Follow the patterns accurately so that parts which are identical in different squares will be interchangeable.

4. Announce: "Will one member from each team open the Team Packet and take out the five envelopes and distribute one envelope to each team member. Each member should open the envelope and empty the contents in front of

him on the table. Do not attempt to do anything until I provide you with additional directions."

5. Announce: "The team's task is to make five (5) squares, one square in front of each team member. There are exactly enough puzzle parts among each team to construct five squares. The first team to complete the task is the winner. I want the teams that complete the task to observe remaining teams until all teams have constructed the five squares.
6. Announce: "The three puzzle parts you have in front of you will not make a square. To make a square, you must receive puzzle parts from other team members. However, there are rules which must be followed:
    a. No team member may talk, signal, gesture, or behave in any manner that would provide guidance, direction, or suggestions to any team member. You may not in any manner alert a team member of your need for a puzzle part he has in front of him.
    b. You can only give, not take.
    c. You cannot help another person construct his square.
    d. Remember: each team member must construct a square so that a team will have five squares when the team has completed its task."
7. Announce: "If there are no questions, you may begin. Good Luck!"
8. As a team completes their task (to construct five squares), request that they observe other teams and note the teams' approaches to constructing their squares.
9. It is not necessary that all teams complete the task; therefore, you may want to restrict the amount of time you devote to putting the squares together---e.g., ten minutes.
10. You will find it is difficult to recall your observations unless you record them. Use a note pad to record the teams' strengths and weaknesses.

11. Notice those team members who construct their square and then completely withdraw from helping others. It is possible to construct many individual squares but there is only one way to construct all five squares at one time. One square must be assembled like the one below or the other members will not be able to construct their squares.



A team member may have to break a completed square so that another team member may have a part he needs to complete his square. You will observe how difficult this is for some team members.

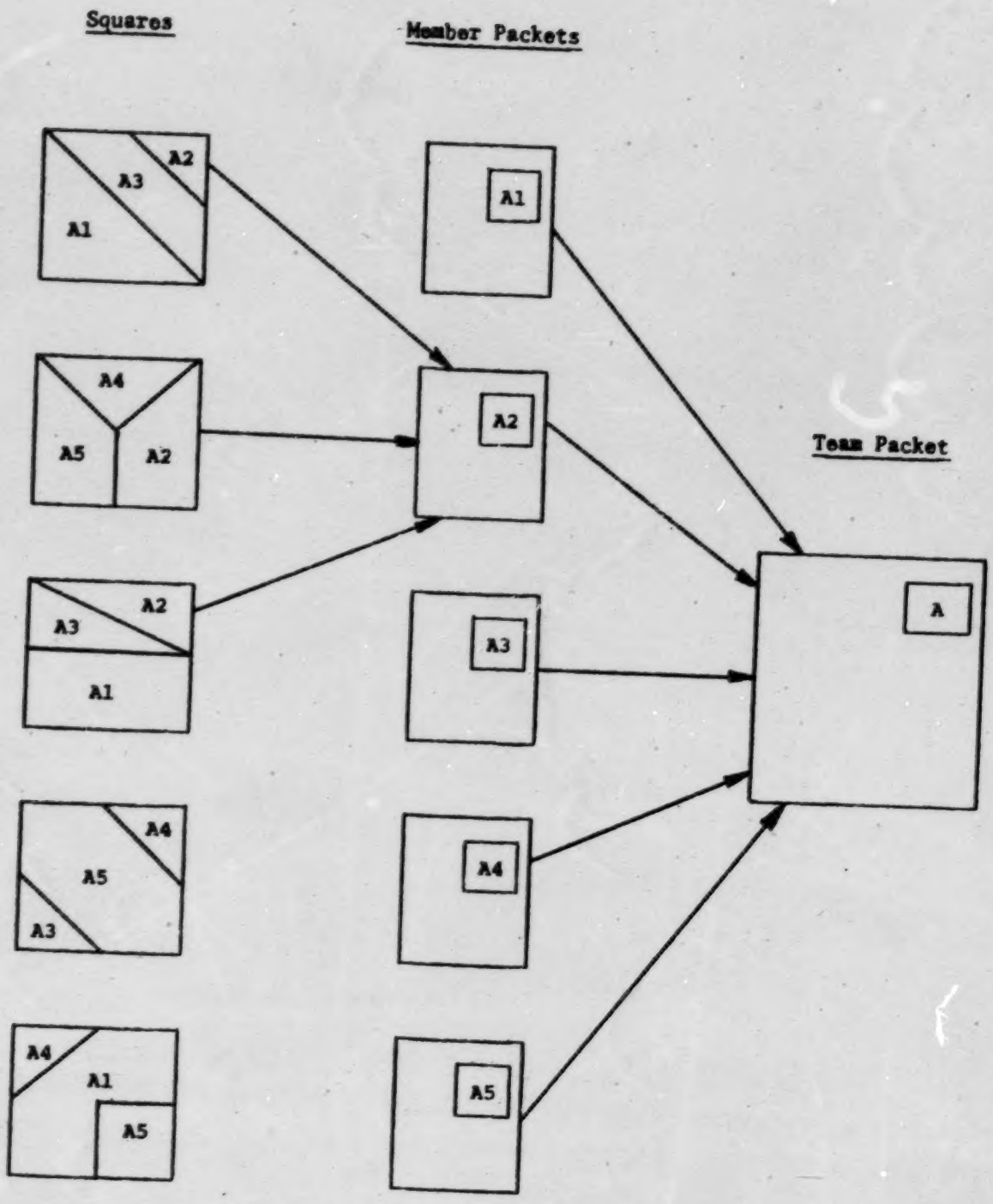
12. You will observe how difficult the task is for people who are leaders. The task is also difficult for followers since there are no cues which provide direction to followers.
13. You will observe how difficult it is for team members to abide by the rules. The discipline demanded by the rules is too much for most of the participants.
14. When participants give someone a part, observe what usually happens. If the recipient does not use the part the way the giver wanted, the giver will many times reach out to place the puzzle part for the receiver. It is difficult for many persons to assign someone a job and then let the person do it himself.
15. At the condlusion of the gaming period, a post-game discussion should follow.

Post-Game Discussion Questions

First, request the observers to report what they noticed. Second, the participants should make observations about their own behavior and that of other teams they watched. Third, use the following questions to stimulate group discussion and teach concepts using the questioning method.

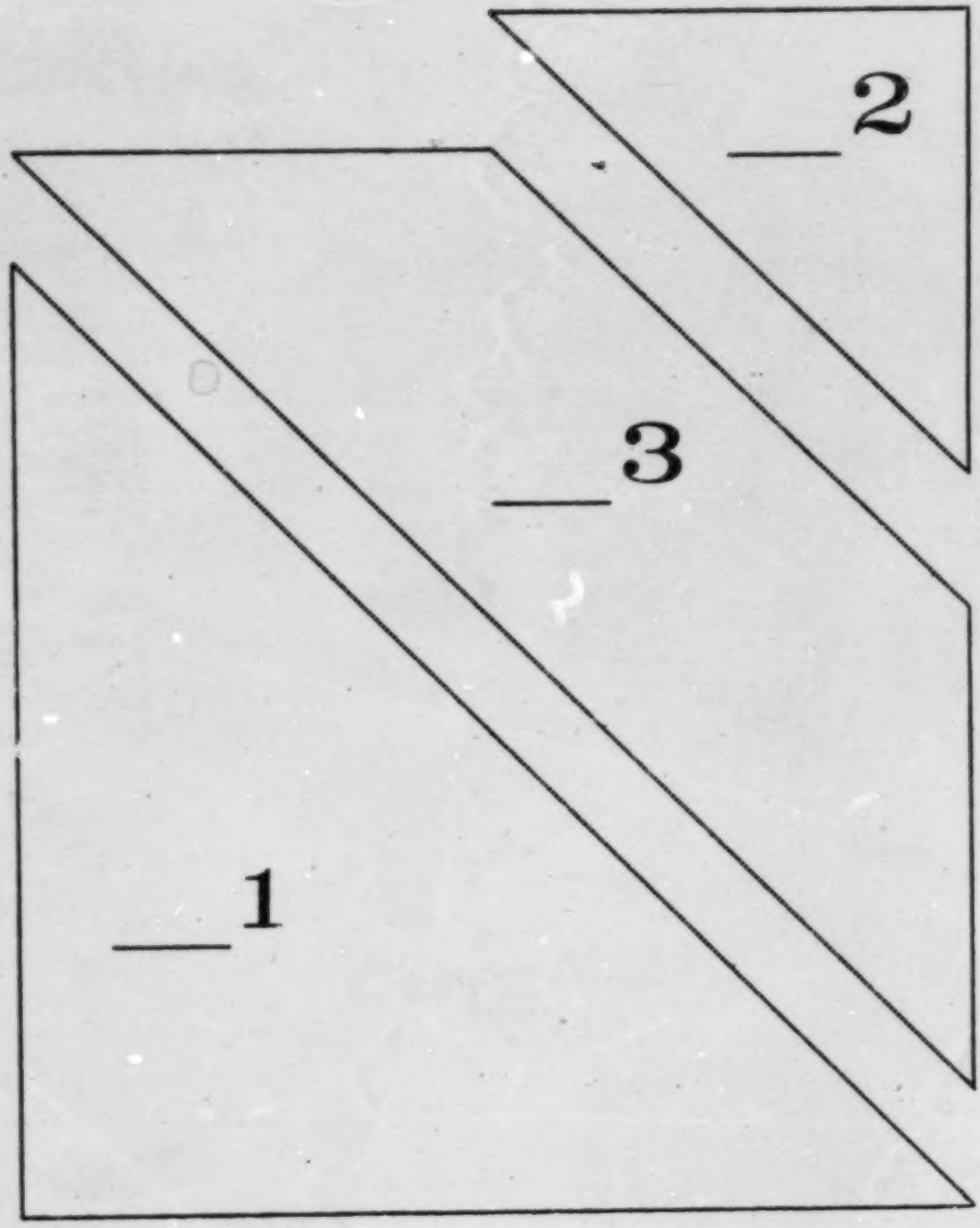
1. Did anyone find it difficult to focus upon the needs of other members in your team? If so, why? In a work situation, are you aware of the needs of other persons with whom you work? Should you be aware of others' needs? Did the game emphasize why awareness of others is important?
2. Did anyone become so involved with their own task that they failed to be aware of others? Do we do this on-the-job also? How can we insure this won't happen again?
3. Did anyone on your team complete their square and then fold their arms and refuse to break up their square and give it to someone who obviously needed one of the squares to complete his square? Isn't this same behavior observable at work?
4. Did you find it difficult to abide by the rules? Why? Are there rules at work which you find difficult to accept? Why are rules established? Are they useful or a hindrance? In what way?
5. Did you give someone a puzzle part and then become frustrated because the receiver did not know where to put it? Did you help them? Why? Does this same experience occur at work? Why must a person assign someone a task and then let them do it without intervention? If someone has difficulty in completing his task, should you do it for him or provide additional information and/or training to successfully complete the task?
6. What did you learn from your participation in this game?

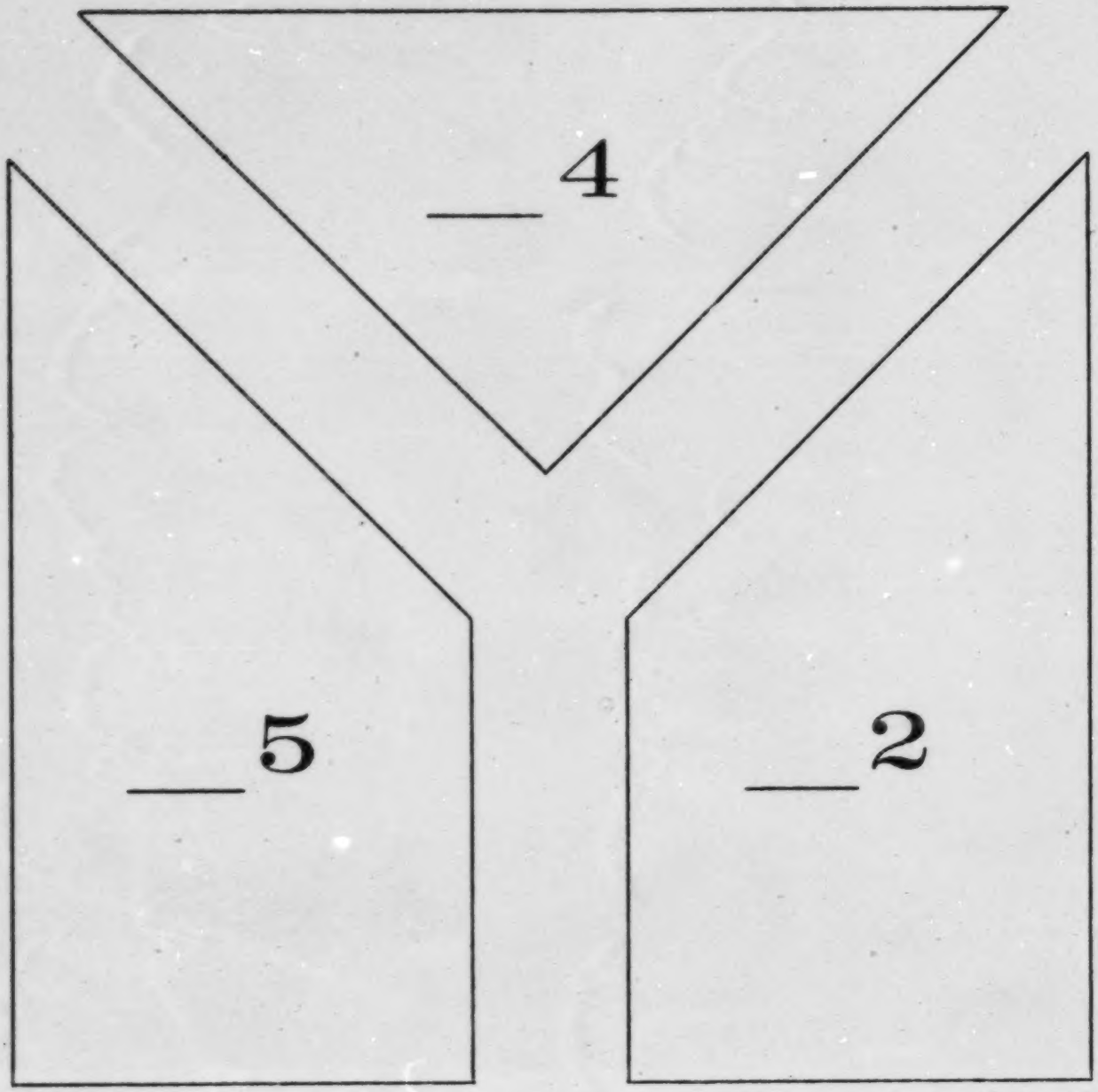
Appendix III-A

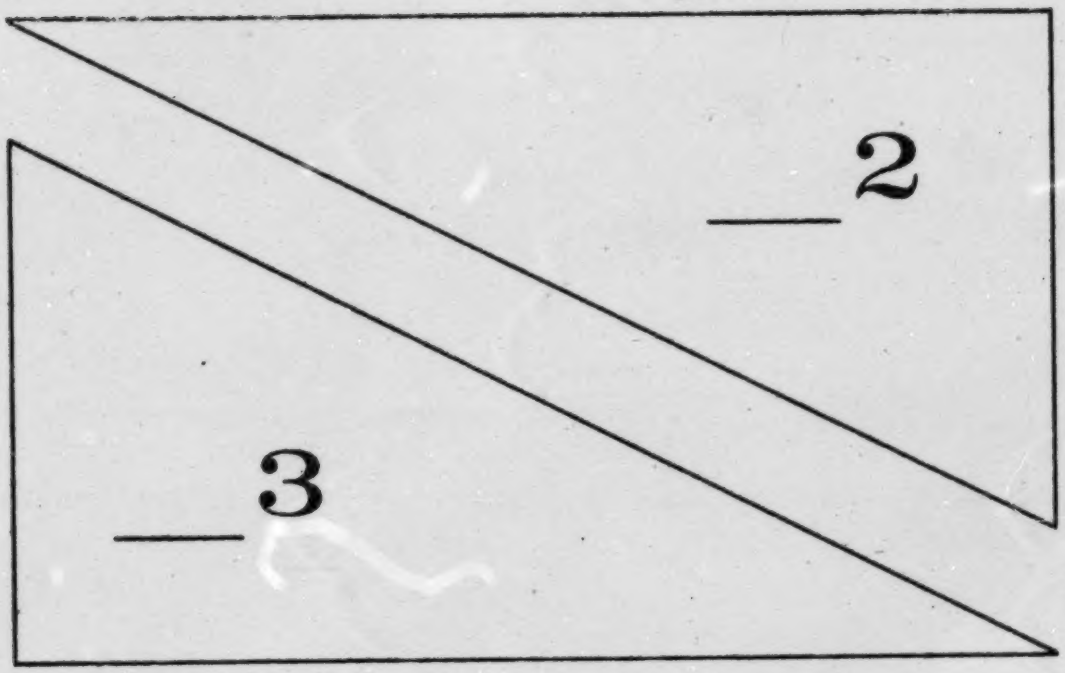


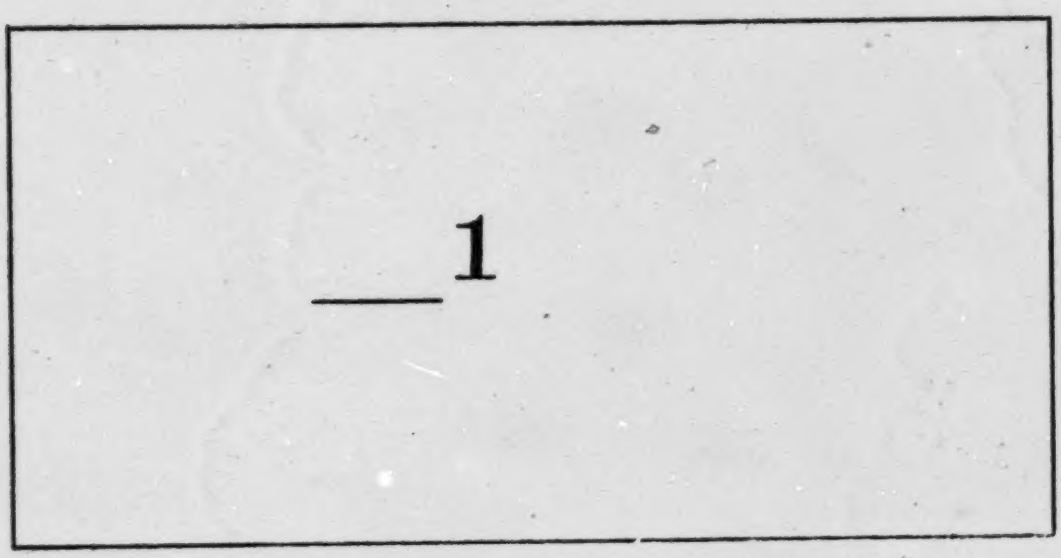
Appendix III-B

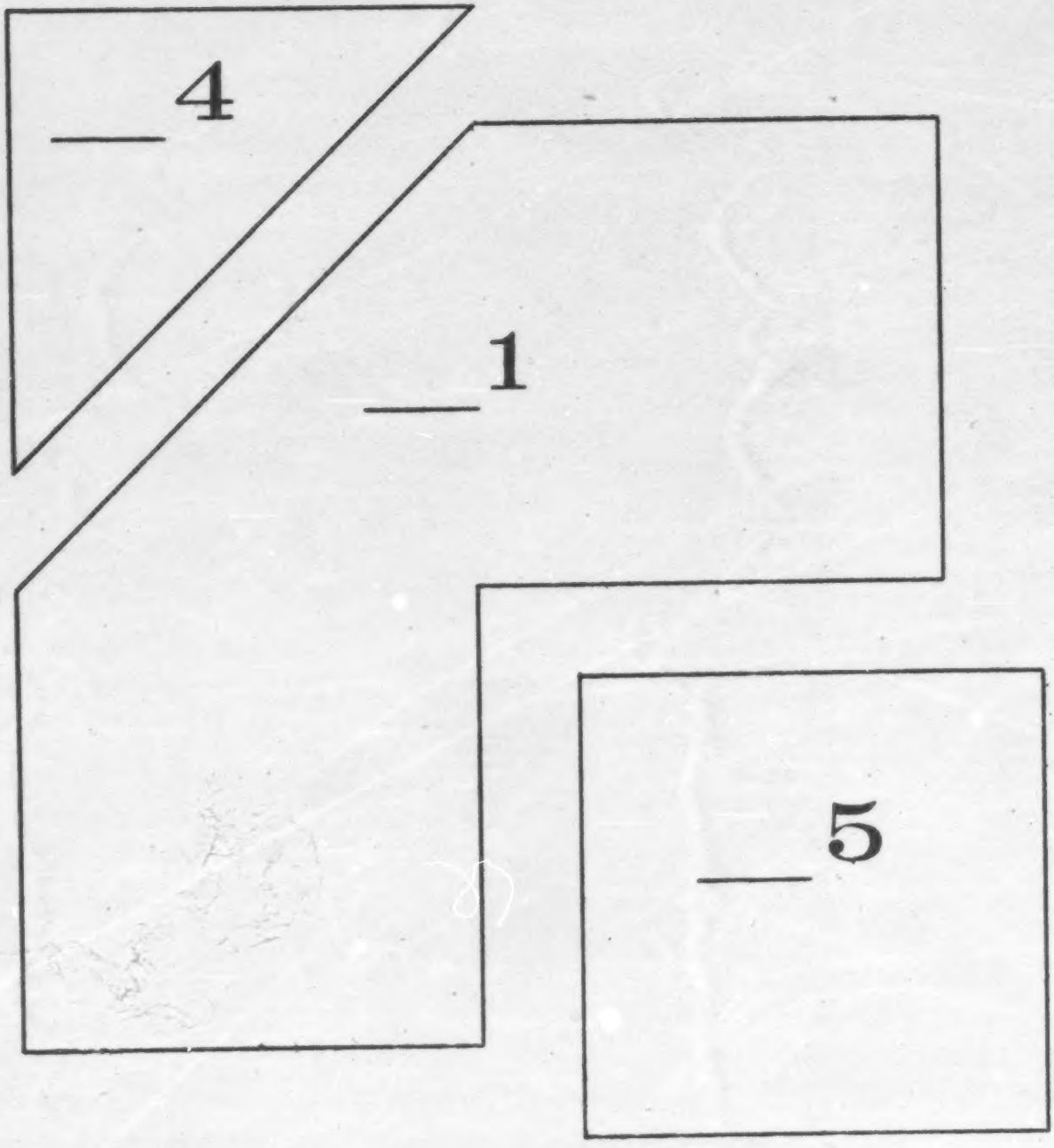
PATTERNS FOR SQUARES


2
3
1


4
5
2


2
3


1


4
1
5

Human Relations Game Four

THE MOON SURVIVAL GAME[1]

Game Overview

In this game participants assume they are traveling to the moon via a space ship to man a weather station located on the light side of the moon. Approximately 200 miles from the weather station the space ship experiences mechanical difficulties and is forced to crash on the surface of the moon. During the crash much of the equipment aboard was destroyed or damaged. The survivors' ability to survive a 200-mile trip to the weather station depends upon their ability to choose which items should be taken on the trip.

The participants will review the 15 items which survived the crash and rank the items in terms of their importance to survival during the 200-mile trip to the weather station.

After individual ratings are made, the participants are divided into teams. The teams are called upon to rank the items as a group, employing group consensus principles in their decision-making activities.

Individual and team rankings are compared to the "correct ranking". In almost all cases, the team rankings are superior to individual rankings, thus drastically illustrating that groups function more effectively than individuals working separately.

Performance Objectives

---

[1]The Moon Survival Game was prepared by Dr. Jimmy G. Koeninger, Angelo State University, San Angelo, Texas. This group involvement activity is also known as The NASA Exercise, Lost on the Moon, and Trip Across the Moon. The original exercise was devised by Joy Hall of the University of Texas and reported in the February, 1969 issue of Today's Education.

After participating in this gaming activity, the student will be able to:

1. Identify group consensus-making principles.
2. Suggest advantages for employing group consensus-making principles in decision-making activities in a group setting.
3. Acknowledge that when groups function effectively, they perform better than if individuals had worked separately.

Procedure

The following procedure is recommended until the instructor has gained confidence and experience in using this game.

1. Distribute "Individual Participant Instructions" (Appendix IV-A) and the "Individual Ranking Sheet" (Appendix IV-B) to all the participants.
2. Discuss the situation in which the participants find themselves. The participants are travelling to the moon via a space ship to man a weather station, the space ship experiences mechanical difficulties en route, and crashes on the moon approximately 200 miles from the weather station.
3. Discuss the task the participants must accomplish. The participants should review the fifteen items which survived the crash (column a of Appendix IV-B) and rank the items (column b) in terms of their importance to their survival on the 200-mile trip to the weather station. Each individual should rank the items using "1" as the most important item to "15", the least important. Columns "c" and "d" (of Appendix IV-B) should not be completed until directed.
4. Divide the participants into teams with no more than six members. Since you are seeking total participation by all team members, it is recommended that the group should be kept relatively small---e.g., six.
5. Each team should select a group leader to serve as spokesman for their

team. (If you want to build an added dimension into the game, assign teams but do not direct the group to select a team leader. The team will quickly realize the necessity for appointing a group leader in order to accomplish their task.)

6. Each team should select a recorder/observer.
7. Distribute "Team Instructions" (Appendix IV-C to each team member and the "Team Report Summary" (Appendix IV-D to the team recorder/observer. Discuss the team's task---to arrive at a team ranking of the items they would take on the 200-mile trip to the weather station.
8. Discuss the group consensus principles (located in Appendix IV-C) the teams should follow to accomplish their task.
9. Direct the recorder/observer for each team to perform two duties:
    a. Record team rankings in column "f", Appendix IV-D. Instruct the recorder/observer not to be concerned with the other columns until so directed.
    b. Observe the team's behavior in applying the group consensus principles suggested. The instructor should also rotate among the teams and observe their activities which should be used in the post-game discussion period.
10. The teams should be allowed approximately thirty to forty-five minutes to reach their team rankings by consensus. The team's ranking should be placed in column "f" (Appendix IV-D).
11. A brief discussion could follow to discuss the team's general reaction to the "survival decision" and the "group consensus principles".
12. Direct each individual to complete columns "c" and "d" on the Individual Ranking Sheet (Appendix IV-B).
13. Read the correct ranking to the participants which they will use for com-

pleting column "c" (Appendix IV-C). The correct ranking was agreed upon by a number of NASA space experts. The correct rankings are:

a. box of matches 15
b. food concentrate 4
c. 50 feet of nylon rope 6
d. parachute silk 8
e. portable heating unit 13
f. two .45 calibre pistols 11
g. one case dehydrated milk 12
h. two 100-lb. oxygen tanks 1
i. stellar map 3
j. life raft 9
k. magnetic compass 14
l. five gallons of water 2
m. signal flares 10
n. first aid kit 7
o. solar-powered radio 5

14. Each participant should compute a differential score for each item. The participant should subtract column "c" from column "b" and place the difference in column "d" for each item. You may want to use the following examples:

(a) Items	(b) Individual Ranking	(c) Correct Ranking	(d) Differential Score
Two 100-lb. tanks of oxygen	1	1	0
Box of matches	5	15	10
Five gallons of water	3	2	1

Even though column "c" rankings may be greater than column "b", negative

signs are not attached to the differences placed in column "d".

15. Each participant should add all fifteen differences in column "d" to arrive at a "Total Differential Score". This score should be placed in the box provided.

16. Each team recorder/observer should collect information needed for the "Team Report Summary" (Appendix IV-D).

17. The recorder/observer should request each team member to read his item rankings found in column "b" (Appendix IV-B) and place his ratings in column "b" (Appendix IV-D) for each individual. At the bottom of column "b" (Appendix IV-D), place the individual's "Total Differential Score" in the appropriate box. The individual's "Total Differential Score" is found in column "d" (Appendix IV-B).

18. The recorder/observer should add the participants' rankings for an item and place the total in column "c" (Appendix IV-D). For example:

(b) Individual Rankings						(c) Total of Individual Rankings
1	2	3	4	5	6	
4	7	3	5	4	2	25

19. After the "Total of Individual Rankings" in column "c" has been computed for each item, the recorder/observer should rank order the "Total of Individual Rankings". A ranking of "1" should be assigned to the item that has the lowest total and so on through "15", the highest total. These rankings should be placed in column "d" (Appendix IV-D).

20. The recorder/observer should compute the differences between the ranking of averages (column d) and the correct ranking (column g in Appendix IV-D). The correct rankings are the same as those found on the Individual Ranking

Sheet (Appendix IV-B, column c). The difference for each item is computed and placed in column "e" (Appendix IV-D). Column "e" is totaled to arrive at the Total Differential Score for the ranking of averages. Place the score in the space provided at the bottom of column "e".

21. Column "f" (Appendix IV-D), the Team's Ranking, should be completed.
22. Column "g" (Appendix IV-D), the Correct Ranking, should be completed. This correct ranking was presented earlier.
23. The recorder/observer should compute the differences between the Team's Ranking (column "f" in Appendix IV-D) and the Correct Ranking (column "g" in Appendix IV-D). The difference for each item is computed and placed in column "h" (Appendix IV-D). Column "h" is totaled to arrive at the Total Differential Score for the Team Differential. Place the score in the space provided at the bottom of column "h".
24. Each team's recorder/observer should read the Total Differential Scores from the Team's Report Summary (Appendix IV-D---columns "b", "e", and "h"). A Reporting Form is found in Appendix IV-E.
25. Without any conversation from the instructor, request the teams to discuss their differential scores---high and low individual, average ranking, and team ranking. The participants will hopefully observe the principles taught in the game without the instructor discussing them.
26. Discuss the team's general reactions to the game and the differential scores.
27. Discuss the post-game discussion questions.
28. The instructor may wish to teach a short unit based upon the game's objectives. Refer to Appendix IV-F (Theory) before teaching a discussion unit or conducting the post-game discussion.
29. You may want to use the same process presented in this game but apply it

to a different setting. You should observe the group's performance to note any change of behavior with regard to group decision-making. The second experience will provide the instructor an opportunity to evaluate the effectiveness of the game and the participant's change in behavior.

Post-Game Discussion Questions

1. Why should a group employ group consensus principles in their decision-making activities?
2. How difficult was it for you or others in your team not to argue for your own individual rankings? Why is it important for us to refrain from this type of behavior?
3. Did anyone in your team change their rating because they did not want to cause any conflicts? Why do some "give up" sooner than others?
4. Do you accept everyone's opinion equally or are you influenced by their agressiveness, physical features, educational background, etc.?
5. Should a group accept everyone's opinion as being equal or should a group weigh receptiveness on the basis of the individual's background, etc.?
6. At any time in your team's discussion, did anyone suggest conflict-reducing techniques---e.g., "Let's vote?" Why are techniques like this employed? Are they helpful or harmful to group decision-making?
7. How well did your team use all the resources (individual team member's opinions) available?
8. What would you do differently if you participated in a similar activity?
9. What activities are you involved in at school, on-the-job or elsewhere in which you will use the principles learned in participating in the game?
10. In summary, what did you learn from participating in this game?

Appendix IV-A

INDIVIDUAL PARTICIPANT INSTRUCTIONS

You and several other persons are traveling in a space ship to the moon to operate a weather station located on the light side of the moon. Approximately 200 miles from the weather station your spaceship experiences mechanical difficulties and is forced to crash on the surface of the moon. During the crash much of the equipment aboard is destroyed or damaged. Your ability to survive a 200-mile trip to the weather station depends upon your ability to choose which items should be taken on the trip.

You should review the fifteen items (in column "a" of Appendix IV-B) which survived the crash and rank the items (in column "b") in terms of their importance to your survival on your 200-mile trip to the weather station. Place a "1" in column "a" for the most important item on the list and so on through "15", the least important.

Appendix IV-B

INDIVIDUAL RANKING SHEET

Items (a)	Individual Ranking (b)	Correct Ranking (c)	Differential Score (d)
One case dehydrated milk			
First aid kit			
Five gallons of water			
Life raft			
Two 100-lb. oxygen tanks			
Portable heating unit			
50 feet of nylon rope			
Box of matches			
Food concentrate			
Parachute silk			
Two .45 calibre pistols			
Stellar map			
Magnetic compass			
Signal flares			
Solar-powered FM receiver/transmitter			
		Total Differential Score	

Appendix IV-C

TEAM INSTRUCTIONS

Your team is responsible for arriving at a group ranking of the items they would take on the 200-mile trip to the weather station. Each member of the team has ranked the items individually; however, in this exercise your team should employ group consensus principles in their decision-making activities.

Group consensus principles you should follow are:

You should not:

1. Argue for your own individual rankings.
2. Change your mind only to reach agreement and avoid conflict.
3. Employ conflict-reducing techniques---i.e., voting, averaging, or trading.
4. Perceive differences of opinion as being a hindrance to the team's efforts.

You should:

5. Exchange useful information.
6. View differences of opinion as being helpful to the team's efforts.
7. Support only decisions with which you can agree somewhat.

You will soon realize that group consensus is difficult to reach. Therefore, team decisions may not meet with everyone's complete approval. Your team should attempt to arrive at each ranking so that all members can at least partially agree.

Team rankings should be recorded in column "f" on Appendix IV-D (Team Report Summary).

Appendix IV-D --- TEAM REPORT SUMMARY

(a) Items	(b) Individual Rankings 1	2	3	4	5	6	(c) Total of Individual Rankings	(d) Rankings of Averages	(e) Differential Individual Rankings	(f) Team Ranking	(g) Correct Ranking	(h) Team Differential
One case dehydrated milk												
First aid kit												
Five gallons of water												
Life raft												
Two 100-lb. oxygen tanks												
Portable heating unit												
50 feet of nylon rope												
Box of matches												
Food concentrate												
Parachute silk												
Two .45 calibre pistols												
Stellar map												
Magnetic compass												
Signal flares												
Solar-powered FM receiver/ transmitter												
Total Differential Scores												

Appendix IV-E

REPORTING FORM

Team	Differential Scores			
	A		B	C
	Individual		Team Average	Team Ranking
	High	Low		
1				
2				
3				
4				
5				
6				
7				

Appendix IV-F

THEORY[1]

Studies of group decision-making and problem-solving have indicated that decisions produced by individuals interacting in a group are usually superior to decisions produced by individuals when certain kinds of tasks are to be carried out. Where a task is relatively simple in its elements, where the elements are objectively separable, and where the task calls for a strict sequence of acts that can be performed by an individual, then an individual trained to organize or solve that type of problem will almost always reach a better decision, and more rapidly, than would a group.

However, in the case of problems that are complex, that have many alternative paths or orders of sub-tasks through which the problem can be attacked, in which the elements are not easily discerned or conceptualized, in which one person can do one sub-task without interfering with another, and, in particular, where the efficacy of the solution depends on the continued coordination of a number of persons, then the decision will almost always be superior if it is produced by a group, in comparison to being produced even by the most capable of the individuals. Furthermore, coordination will be superior if those persons involved in performing the task compose the group making the decision. Of course, the quality of the decision is also affected by the skills of the group members in coordinating their individual resources and their efforts. See, for example, Hall and O'Leary (1967), McDavid and Harari (1968, Chapter 11), Miles (1959, Chapter 2), Newcomb, Turner, and Converse (1965, Chapter 15), and Watson (1966, Chapter 4).

---

[1]Extracted from: A Preliminary Manual for Organizational Training in Schools (Eugene, Oregon: University of Oregon, Center for the Advanced Study of Educational Administration), December, 1970.

Three decision-making styles observed to occur often in groups are: (1) decisions made by a single person or a minority of a group, (2) decisions based on the ability of a majority to overrule a minority, and (3) decisions based on support and agreement of the total group after debate and discussion. While it is difficult to obtain these decision-making patterns in their pure form, even under controlled laboratory conditions, studies by behavioral scientists indicate that each has a different effect on a group's performance. Speaking again of complex tasks demanding coordination, decisions emanating from the minority sub-group style (which is the style most frequently used in everyday life) are the least effective in using member resources and in obtaining the commitment of members, and are least apt to be decisions of high quality. When the number of members contributing to a decision is few, the final decision depends on the limited resources of the few. Generally, the minority (or one person) does less well than the total group both because it usually does not have as much resourcefulness as the total group and because mutual probing and stimulation are missing. This especially is true in complex organizations such as schools, in which the central tasks of the organization cannot be carried out in a small face-to-face group involving most of the members.

The majority-vote style relies more than does the previous method on the combined effects produced by interaction and the resources of most individuals. As such, it is superior to the minority style in producing effective decisions. However, some assets are still being wasted when the majority vote is used. To the extent that the out-voted or non-involved minority are unable to use their resources and to influence the decision, there are still some resources not being brought to bear on the decision.

The decision-making style of group consensus represents a pattern of interaction in which all participants contribute resources and all share in the final decision. No decision becomes final that cannot obtain the approval of nearly all members; for this reason, consensus is difficult and sometimes impossible to obtain. It

requires a fairly advanced understanding of the dynamics of conflict, interpersonal relations, and the use of individual resources. Observations indicate, however, that the method of consensus, when applied to complex problems requiring complex interpersonal coordination, results in decisions of superior quality which are usually well implemented.

If the method of consensus is to be used to greatest effort, the group must be skillful in using its resources. Ordinary life in groups does not enable most of us to develop the requisite skill. In fact, even if one develops skill of this sort in one group, he may find himself quite unable to bring this skill to bear in another group.